June 9, 1997

M E M O R A N D U M

TO: Orville D. Green, Assistant Administrator
Air & Hazardous Waste

FROM: Martin Bauer, Chief
Air Quality Permitting Bureau

SUBJECT: Issuance of Tier II Operating Permit #019-00036 to
Koch Materials Company - Idaho Falls Asphalt Plant (Idaho Falls)

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the controls of Air Pollution in Idaho) for issuing Operating Permits.

PROJECT DESCRIPTION

This project is for the issuance of a Tier II Operating Permit for the Koch Materials Company - Idaho Falls Asphalt Plant located at Idaho Falls, Idaho, in order to establish the facility as a synthetic minor source. Emission point sources existing at the facility are as follows: one (1) boilers, one (1) hot oil heater, ten (10) storage tanks, and three (3) loading racks. Fugitive emission sources found at the facility are pumps, valves, fittings, paved and unpaved roads.

SUMMARY OF EVENTS

On July 31, 1995, the Division of Environmental Quality (DEQ) received an application for a Tier II Operating Permit. On August 30, 1995, the application was declared administratively complete. On September 25, 1995, DEQ sent a letter requesting additional information to facilitate the writing of the Tier II operating permit. On October 16, 1995, DEQ received a letter requesting a two (2) week extension, which was based on the phone conversation between Mark Sanders, Project Engineer of the facility and Robert Baldwin, Air Quality Engineer, of DEQ. The supplemental materials were received by DEQ on November 2, 1995.

Staff determined during the comment period that Koch Materials had not paid fees for 1994, 1995, and part of 1996. The fees were determined by staff and a request for payment was sent. The fees were paid on September 16, 1996. When Koch paid the fees, Koch indicated that they wanted to make changes to the permit, including some units not previously addressed. DEQ staff called

Marks Sanders on February 18, 1997, to receive any input concerning the changes, if any, to the Idaho Falls facility. DEQ did not receive an answer, therefore, staff proceeded to finalized the permit.

RECOMMENDATIONS

Based on the review of the Operating Permit application and on applicable state and federal regulations concerning the permitting of air pollution sources, the Bureau recommends that Koch Materials Company - Idaho Falls Asphalt Plant, in Idaho Falls, be issued a Tier II Operating Permit. Staff members also recommend that the facility be notified in writing of the obligation to pay permit application fees for the Tier II permit.

MB/REB:jrj ...\kochmat\kochif-f.IMM

cc: J. Johnston, Idaho Falls Regional Office
Source File
COF

May 9, 1997

MEMORANDUM

TO: Martin Bauer, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

FROM: Robert Baldwin, Air Quality Engineer
Air Quality Permitting Bureau
Operating Permits Section
Yihong Chen, Air Quality Engineer
Air Quality Permitting Bureau
Operating Permits Section

THROUGH: Susan J. Richards, Air Quality Permit Manager
Air Quality Permitting Bureau
Operating Permits Section

SUBJECT: Technical Analysis for Tier II Operating Permit #019-00036
Koch Materials Company, Idaho Falls, Idaho

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) for issuing Operating Permits (OP).

FACILITY DESCRIPTION

Koch Materials Company (Koch) is an asphalt processing facility. Koch receives asphalt by truck and rail. The asphalt is mixed with the appropriate additives to produce asphalt cement, asphalt emulsion, and cutback asphalt. The products produced at the facility are shipped by truck.

PROJECT DESCRIPTION

This project is for an Operating Permit (OP) for the following existing point and fugitive emission sources.

Point Sources:

Fuel Burning Equipment

(1) Boiler - Natural Gas-fired with a maximum rated capacity of 6.3 MM Btu/hr used for the process. The boiler was constructed in 1964 and is not an NSPS source.

Boiler Specifications:

Manufacturer:	Cleaver-Brooks
Model:	CB428-150
Max. Hourly Combustion Rate:	6.3x10^3 SCF/hr
Fuel:	Natural Gas

Stack Design Specifications:

Height:	25 feet
Exit Diameter:	1.5 feet
Exit Gas Flow Rate:	Unknown
Exit Temperature:	350°F-425°F (estimated)

(2) Hot Oil Heater - Natural Gas-fired with a maximum rated capacity of 6.25 MM Btu/hr used for the process. The boiler was constructed in 1994 and is not an NSPS source.

Hot Oil Heater Specifications:

Manufacturer:	Cleaver-Brooks
Model:	IPT50
Max. Hourly Combustion Rate:	6.25x10^3 SCF/hr
Fuel:	Natural Gas

Stack Design Specifications:

Height:	22 feet
Exit Diameter:	1 feet
Exit Gas Flow Rate:	Unknown
Exit Temperature:	350°F-425°F (estimated)

Storage Tanks

(1) Tank #1 - Fixed roof tank with a rated capacity of 17,600 gallons. The tank was installed prior to 1985 and is not an NSPS source.

Tank #1's Specifications:

Material Handling:	Kerosene
Tank Type:	Horizontal Fixed Roof
Tank Capacity:	17,600 gallons

(2) Tanks #4 & #5 - Fixed roof tanks with a rated capacity of 19,907 gallon. Each tank was installed prior to 1985 and is not an NSPS source.

Tanks #4 & #5's Specifications:

Material Handling:	Asphalt Emulsion
Tank Type:	Vertical Fixed Roof
Tank Capacity:	19,907 gallons

(3) Tank #6 - Fixed roof tank with a rated capacity of 47,006 gallons. The tank was installed prior to 1985. The tank is subject to 40 CFR 60 Subpart Kb. The tank will not be regulated by the requirements due to the low true vapor pressure of asphalt emulsion.

Tank #6's Specifications:

Material Handling:	Asphalt Emulsion
Tank Type:	Vertical Fixed Roof
Tank Capacity:	47,006 gallons

(4) Tank #7 - Fixed roof tank with a rated capacity of 47,006 gallons. The tank was installed prior to 1985. The tank is subject to 40 CFR 60 Subpart Kb. The tank will not be regulated by the requirements due to the low true vapor pressure of asphalt.

Tank #7's Specifications:

Material Handling:	Asphalt
Tank Type:	Vertical Fixed Roof
Tank Capacity:	47,006 gallons

(5) Tank #8 - Fixed roof tank with a rated capacity of 56,408 gallons. The tank was installed prior to 1985. The tank is subject to 40 CFR 60 Subpart Kb. The tank will not be regulated by the requirements due to the low true vapor pressure of asphalt.

Tank #8's Specifications:

Material Handling:	Asphalt
Tank Type:	Vertical Fixed Roof
Tank Capacity:	56,408 gallons

(6) Tank #10 - Fixed roof tank with a rated capacity of 414,596 gallons. The tank was installed in 1957 and is not an NSPS source.

Tank #10's Specifications:

Material Handling:	Asphalt
Tank Type:	Vertical Fixed Roof
Tank Capacity:	56,408 gallons

(7) Tank #11 - Fixed roof tank with a rated capacity of 40,308 gallons. The tank was installed in 1988 and is subjected to 40 CFR 60 Subpart Kb. The tank will not be regulated by the requirements due to the low true vapor pressure of cutback asphalt.

Tank #11's Specifications:

Material Handling:	Cutback Asphalt
Tank Type:	Vertical Fixed Roof
Tank Capacity:	40,308 gallons

(8) Tank #12 - Fixed roof tank with a rated capacity of 29,614 gallons. The tank was installed in 1988 and is not an NSPS source.

Tank #12's Specifications:

Material Handling:	Cutback Asphalt
Tank Type:	Vertical Fixed Roof
Tank Capacity:	29,614 gallons

(9) Tank #13 - Fixed roof tank with a rated capacity of 29,614 gallons. The tank was installed in 1988 and is not an NSPS source.

Tank #13's Specifications:

Material Handling:	Naphtha
Tank Type:	Vertical Fixed Roof
Tank Capacity:	29,614 gallons

(10) Tank #20 - Fixed roof tank with a rated capacity of 1,055,058 gallons. It was installed in 1995 and is subjected to 40 CFR 60 Subpart Kb. The tank will not be regulated by the requirements due to the low true vapor pressure of asphalt.

Tank #20's Specifications:

Material Handling:	Asphalt
Tank Type:	Vertical Fixed Roof
Tank Capacity:	1,055,058 gallons

Loading Rack

(1) Loading Rack #1 - Asphalt Cement loading arm

Loading Rack #1's Specifications:

Material Handling:	Asphalt Cement
Type of Loading:	Overhead loading - splash fill, normal service
Annual Throughput :	50,000,000 gallons

(2) Loading Rack #2 - Cutback Asphalt loading arm

Loading Rack #2's Specifications:

Material Handling:	Cutback Asphalt
Type of Loading:	Overhead loading - splash fill, normal service
Annual Throughput :	15,000,000 gallons

(3) Loading Rack #3 & #4 - Asphalt Emulsion loading arm

Loading Rack #3's & #4's Specifications:

Material Handling:	Asphalt Emulsion
Type of Loading:	Overhead loading - splash fill, normal service
Annual Throughput :	50,000,000 gallons

Fugitive Sources:

(1) Pumps, valves, and fittings.

(2) Paved and Unpaved Roads.

SUMMARY OF EVENTS

On July 31, 1995, The Division of Environmental Quality (DEQ) received Koch Materials Company's Tier II operating permit application. After review of the materials submitted, DEQ determined that the application was administratively complete on August 30, 1995. On September 25, 1995, DEQ sent a letter requesting additional information to facilitate the writing of the Tier II operating permit. On October 16, 1995, DEQ received a letter requesting a two week extension, which was based on the phone conversation between Mark Sanders, Project Engineer of the facility and Bob Baldwin, Air Quality Engineer of DEQ. The supplemental materials were received by DEQ on November 2, 1995.

Staff determined during the comment period that Koch Materials had not paid fees for 1994, 1995, and part of 1996. The fees were determined by staff and a request for payment was sent. The fees were paid on September 16, 1996. DEQ staff called Marks Sanders on February 18, 1997, to receive any input concerning the changes if any to the Idaho Falls facility. DEQ did not receive an answer, therefore, staff proceeded to finalized the permit.

DISCUSSION

1. Emission Estimates

Emission estimates of combustion units, storage tanks, and loading racks were provided by Koch Materials Co. and can be seen in the July 31, 1995, application. DEQ has estimated the PM, PM-10, SO_2, NO_x, CO, and the VOC emissions of combustion units by using emission factors from AP-42(1/95), Section 1.4 (natural gas combustion). Due to the lack of data of Asphalt, Asphalt Emulsion, and Cutback Asphalt, the molecular weight of No.6 fuel oil vapor and its true vapor pressure have been used for Asphalt and Asphalt Emulsion. Data for the mixture of No.2 fuel and Asphalt have been used for Cutback Asphalt, which is more conservative assumption.

VOC is the pollutant that triggers major source status for Koch Materials Company. The potential to emit (PTE) is above 100 t/yr according to applicant's application.

The applicant chose to net out of Tier I permitting by limiting the potential to emit of VOC to be less than 100 t/yr. The applicant proposed the enforceable limits as followings: 1) natural gas usage for Cleaver-Brooks Boiler shall not exceed 62.822 million standard cubic feet per year (MMscf/yr); 2) natural gas usage for Cleaver Brooks Hot Oil Heater shall not exceed 62,571 MMscf/yr; 3) the annual throughput for the facility shall not exceed 50,000,000 gallons of asphalt cement, 50,000,000 gallons of asphalt emulsion, and 15,000,000 gallons of cutback asphalt.

The calculations for the tank emissions were based on the use of tanks Program 2.0. The total combined throughput of the tanks were 361,075,000 gallons asphalt; 150,000,000 gallons of asphalt emulsion; 30,005,000 gallons cutback asphalt; 7,500,000 gallons Kerosene; and 4,500,000 gallons naphtha.

The Hazardous Air Pollutants (HAPs) emission rates were based on the total potential VOC emissions. The potential VOC emissions (with throughput restrictions on tanks and loading racks) are estimated at seventy-eight (78) T/yr. Naphthalene and Polycyclic Organic Matter are estimated at 0.000004 weight percent each. These calculations equate to 0.00031 T/yr of Naphthalene and Polycyclic Organic Matter each. Koch Materials has requested HAPs limits of eight (8) T/yr of any individual hazardous air pollutant and 20 tons per year of all combined HAPs.

Modeling has not been performed due to this source's low emissions at the proposed operating rates and that storage tanks do not subject to the VOC's requirements of 40 CFR 60 even though it is an NSPS source according to the installed date and tank capacity.

Compliance determination shall be based on the sections, OPERATING REQUIREMENTS and MONITORING AND RECORDKEEPING REQUIREMENTS, in the permit. Compliance with the annual emission standard is based on the most recent twelve (12) months of product volume data. This is due to the product volume being the parameter of concern when calculating the emissions.

2. Area Classification

Koch Materials Co. Idaho Falls facility is located in Idaho Falls, Bonneville County, Idaho. This area is located in AQCR 61. The area is classified as attainment or unclassifiable for all federal and state criteria air pollutants (i.e., PM, PM-10, CO, NO_x, and SO_2).

3. Facility Classification

The facility is not a designated facility as defined in IDAPA 16.01.01.25. The facility is classified as an A2 source because the actual emissions of VOC is less than 100 T/yr.

4. Regulatory Review

This operating permit is subject to the following permitting requirements:

a.	IDAPA 16.01.01.401	Tier II Operating Permit.
b.	IDAPA 16.01.01.403	Permit Requirements for Tier II Sources.
c.	IDAPA 16.01.01.404,01(c)	Opportunity for Public Comment.
d.	IDAPA 16.01.01.404,04	Authority to Revise Operating permits.
e.	IDAPA 16.01.01.406	Obligation to Comply.
f.	IDAPA 16.01.01.470	Permit Application Fees for Tier II Permits.
g.	IDAPA 16.01.01.625	Visible Emission Limitation.
h.	IDAPA 16.01.01.650	General Rules for the Control of fugitive Dust.
h.	IDAPA 16.01.01.675&677	Fuel Burning Equipment - Particulate Matter. Standards for Minor and Existing Sources.
i.	40 CFR 60 Subpart K	Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.
j.	40 CFR 60 Subpart Ka	Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction or Modification Commenced After May 18, 1978, and Prior to July 23, 1984.
k.	40 CFR 60 Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquids Storage Vessels) for Which Construction, Reconstruction or Modification Commenced After July 23, 1984.

FEES

Fees apply to this facility in accordance with IDAPA 16.01.01.470. The facility is subject to permit application fees for Tier II permits of five hundred dollars ($500.00). IDAPA 16.01.01.470 became effective on March 7, 1995.

RECOMMENDATIONS

Based on the review of the Operating Permit application and on applicable state and federal regulations concerning the permitting of air pollution sources, the Bureau recommends that Koch Materials Company in Idaho Falls be issued a Tier II Operating Permit for the sources that exist at the facility. Staff members also recommend that the facility be notified of the Tier II permit fee requirement in writing. This fee will be applicable upon issuance of the permit.

MB\SJR\REB:jrj...\kochmat\kochif-f.TAM

cc: J. Johnston, Idaho Falls Regional Office
Source File
COF

APPENDIX A

Koch Materials Company (Idaho Falls)					
2525 Lindsey Blvd.					
Idaho Falls, ID 83402					
	PM	CO	NOx	SOx	VOC
Source	T/yr	T/yr	T/yr	T/yr	T/yr
Boiler #1 (NG)	0.8	2.05	8.22	0.04	0.16
Boiler #1 (Oil)	0.89	2.21	8.86	31.9	0.09
Boiler #2 (NG)	0.8	2.05	8.22	0.04	0.16
Boiler #2 (Oil)	0.89	2.21	8.86	31.9	0.09
Hot Oil Heater	0.32	0.55	2.63	0.02	0.14
Amount of fuel usage		Basis Maximum Capacity for 8760 hours.			
Boiler #1 (NG)	117.4	MMSCF/yr			
Boiler #1 (Oil)	885,917	Gallons			
Boiler #2 (NG)	117.4	MMSCF/yr			
Boiler #2 (Oil)	885,917	Gallons			
Hot Oil Heater	52.56	MMSCF/yr			